

**PATENT APPLICATION**  
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Abstract

A photolithographic machine is described for transferring fine patterns from a photomask to a flexible roll-to-roll format. It is capable of printing multiple layers in exact registry onto a distorted format. It contains 1 to 1 reflective optics, dynamic distortion and magnification correction. The optical transfer assembly scans reciprocally across the format and back and the photomask/platen assembly moves incrementally forward between scans to complete a raster pattern. Both the object and image fields are autofocussed. The optical transfer assembly is retained into a straight-line scanning path by opposed air bearings retained on a straight guide. The photomask/platen assembly is retained into an orthogonal path by air/vacuum bearings operating on a vertical stone face. Together this arrangement substantially prevents yaw scanning errors. The web is fed through the machine from roll to roll without twisting. It remains stationary during each recording pass.